Appendix H.

SCIENTIFIC ABSTRACT

This study will evaluate the safety and efficacy of allogenic donor lymphocyte infusions in patients who have relapsed hematologic malignancies after allogeneic bone marrow transplantation (BMT). Donor lymphocyte transfusions have resulted in the cure of some patients with relapsed leukemia or lymphoproliferative disorder after allogeneic BMT, but has been complicated by the development of graft versus host disease (GvHD). We hypothesize that a retroviral vector containing the Herpes simplex thymidine kinase (HStk) gene will allow for retention of the anti-leukemia response of transfused donor lymphocytes while allowing for the adverse effects of GVHD to be mitigated. Patients with relapsed hematologic malignancies after allogeneic BMT will be infused with *ex vivo* gene modified donor lymphocytes. The Herpes Simplex thymidine kinase (HStk) gene will be transduced into the cells *ex vivo* using LTKOSN. 1 vector supernate. Insertion of the HStk gene into lymphocytes confers a sensitivity to the anti-herpes drug ganciclovir (GCV). This selective destruction of donor lymphocytes *in situ* will be used to abrogate the effects of graft versus host disease, if it develops.